

DENVER PC BOARDWATCH

NEWSLETTER FOR ELECTRONIC BULLETIN BOARDS AND ON-LINE SERVICES

Editor: Jack Rickard

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TELE-BITS

THE BBS LIST

This month **Denver PC Boardwatch** presents a list of **202** bulletin boards/on-line services available in area code **303** - see page 16. A total of **8** BBS were deleted from the July list with **12** additions. As always, each number is verified by actual telephone contact within the last **30** days. Additions and major changes to the list are highlighted in bold-face type. Corrections or comment may be addressed via the **Denver PC Boardwatch** Echomail Conference, by Fidonet Mail addressed to **MARION RICKARD** via Net **104** Node **30**, **JACK.RICKARD** on the General Electric **GENie** information service, **BOARDWATCH** on the new **976-GEIS** service or **71471,561** on Compuserve.

NEW DOS 4.0 RELEASE

IBM is expected to release a new version of the PC Disk Operating System this month. The new upgrade to DOS will incorporate several long needed features. **DOS 3.3** limits logical disk size to **32 MB**. The new **4.0** version will support drive devices up to **512 MB** in capacity. Additionally, the new version features an extended memory manager and a graphic interface. Rumor has it that the interface can reside in extended memory leaving the full **640 KB** of normal DOS memory entirely for application programs.

CONGRESSIONAL RESEARCH SERVICE ECONOMICS HOTLINE

The Congressional Research Service now operates a voice recording economic hotline titled **CRS STATS LINE** at **(202)287-7034**. The service is intended to provide members of Congress with a quick update on national economic statistics. Listed items include Consumer Price Index, Housing Starts, Unemployment, Federal Deficit, Gross National Product, Prime Rate, Public Debt, and Trade Balance.

GENIE ANNOUNCES DENVER 976 SERVICE

General Electric Information Services (**GEIS**) operates the popular **GENie** on-line service nationwide. The low-cost service has proven a popular alternative to Compuserve and the Source and currently sports over **100,000** subscribers - a base second only to Compuserve. The service offers news, electronic mail, on-line airline reservations, stock quotations, and special

interest groups termed RoundTables on every conceivable subject.

GENie has announced a new service - called **GEIS** - that will operate on a **976** Scoop-Line service in the Denver Colorado area at **1-976-GEIS (4347)**. The new "regionalized" service begins operation July 15.

According to Dave Rice of **GEIS**, General Electric is developing the concept of a national network of regional services tailored to the needs of specific communities. This would operate similarly to a national television network such as **NBC** or **CBS** and their relationship to local "affiliate" stations. Denver has been selected as the first test market for the new concept largely because of the excellent relationship existing between **GEIS** and Mountain Bell as well as the high-technology environment here. If the Denver service proves popular, the concept will be expanded to cities around the country.

GEIS includes many features of the **GENie** national service along with information products specifically tailored to the Denver area. Access will be a bit different. **GENie** service requires a lengthy registration process and use of a Master Card or Visa for billing. Additionally a **\$29** fee is required to start service. By contrast, Compuserve charges a **\$39** initiation fee and the Source has a **\$10** monthly minimum charge. All three national services also offer "premium" products that incur additional surcharges beyond normal connect-time fee. Further, daytime or premium hours require much higher connect time fees on most national services.

The new **GEIS** service costs **\$0.25** per minute. Although this works out to about **\$15** hourly, there are no sign-up fees, no monthly minimums, and no credit card requirements. Further, there are no surcharges for any of the offered services and the rate is the same day or night. Simply dial the service, select your own E-Mail address and password the first time, and use what you need. All charges will be billed to your normal Mountain Bell telephone bill. Although slightly more expensive, this approach eliminates much of the complexity and confusion associated with the national services over hours of operation, special services, etc. And for casual users who occasionally need to download a new shareware program or transmit an

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HARDWARE

At D.T.C. we stock desktop, transportable, laptop and tower micro computers, hard disk drives, memory upgrades, power supplies, motherboards, add-on cards, enhanced video systems, laser & dot matrix printers, scanners, modems, FAX, switch boxes, joysticks, mice, digitizers, keyboards and more!

SOFTWARE

We have a large selection of business, personal, educational and recreational programs for MS-DOS, OS/2 and Unix compatible computers at a savings of at least 20% off the manufacturer's suggested price. If you order your software in advance, you can take an additional 5% discount. You save 25%!

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occasional E-Mail message, nothing could be simpler. You need not "belong" to anything - the ultimate in flexibility.

Because of the regional nature of the service, much of the interest will likely revolve around local products and services making the system more like a **DENVER SUPER BBS**. We look to the development of numerous RoundTable areas on the service by local entrepreneurs and businesses. What could be done with such a regionalized service? It shouldn't be too difficult to get Stapleton Airline Flight schedules on-line. The Denver Post or Rocky Mountain News could offer an electronic edition without too much trouble. A Denver Broncos Football Team **STATLINE** RoundTable would undoubtedly garner some interest. The opportunity for local politicians such as Governor Romer or Mayor Pena to respond to local issues and questions could be done via a **GOVERNMENT FORUM** area. Local Television/Cable stations could easily post schedules. We'd like to see an area where local computer retail stores could advertise. There is already a local BBS titled **RABBIT** run by the Colorado Highway Department to list roads under construction and their status - a natural for the **GEIS** system. We don't know that any of these services will be available. But when you combine the power of a big system with the narrower focus of a regional territory, the possibilities are enormous. There is no need to maintain the bland, one size fits all perspective forced on any service marketing to a national audience.

Denver PC Boardwatch will be among the earliest supporters with a **DENVER PC BOARDWATCH** RoundTable area. To access this area, type **M435** at any prompt after logging on. The RoundTable will feature a **Denver PC Boardwatch** message area to discuss the newsletter and correspond with the editor. A **DENVER AREA BBS** message area will allow local sysops to advertise their BBS and users to provide feedback and reviews of local BBS. A **DATA COMMUNICATIONS** area will support discussion of developments in telephone and data communications technology including the coming OSI/ISDN, calling party identification and the **CLASS** services, and developments in PC hardware and software to take advantage of these new services.

A file area will be provided where you can download any back-issue of Denver PC Boardwatch Newsletter in electronic ASCII text format. All shareware titles ever reviewed by Denver PC Boardwatch will be available for download. A communications software area will contain the latest versions of QModem, GT Powercomm, ProComm, Telix, and Boyan along with preloaded dialing directories containing selections from the Denver PC Boardwatch List of BBS. The list

itself will be on-line via a special database function. Finally, in a special arrangement between Denver PC Boardwatch and **GEIS**, the current issue of Denver PC Boardwatch Newsletter will be available for download.

An open house for the new **GEIS 976** service is planned during the second week in August at the Mountain Bell Executive Center.

YELLOW PAGE DIRECTORY ON DISK

Digital Publications of Norcross Georgia is marketing a series of regionalized business directories they call **PC YELLOW PAGES**. A directory listing **10,000** businesses nationwide using **800 WATS** lines, and **5000** businesses operating within a single specific area code is **\$99** plus **\$7** for each annual update. The directories include a database program with mailing label and dialing capabilities. Digital Publications Inc., 5390 Peachtree Industrial Blvd., #105, Norcross, GA 30071; (404)448-6837.

RADIO TRIVIA

FM radio is about to surpass **AM** radio with regards to the number of stations in operation. According to Duncan's Radio Market Guide, there are currently **4902 AM** radio stations versus **4041 FM** stations. Notably, despite slightly fewer operating stations, **FM** radio swallows up nearly **75%** of the approximately **\$7** billion dollars in ad revenues. **FM** stations have swallowed the lucrative pop music market whole largely because of the superior sound reproduction the **FM** stereo technology offers. This leaves **AM** radio to play to the talk radio and sports markets. Under development: a single band radio that allows you to tune completely through all **AM** and **FM** stations without "switching" bands.

REMOTE MODEM POWER SWITCH

Kenmore Computer Technologies of Rochester New York offers an attractive price on an interesting device. The unit is titled **MR. MOX**. Essentially the unit is an **AC** power switch controlled by the carrier detect line of an external modem. Ostensibly, you could dial your home computer from a remote location. The home modem answers the telephone and establishes a connection. **MR. MOX** then switches the power to your PC and it boots up. Once the session is completed, carrier drops and **MR. MOX** shuts down your PC. The unit features two switched and two live receptacles. This idea is not really new. However, the price may well be. The unit is priced at **\$99.95**. Kenmore Computer Technologies, 30 Suncrest Dr., Rochester, NY 14609; (716)654-7356.

HOTLINE TRIVIA

The Washington D.C./Moscow hotline recently celebrated 25 years of operation. Oddly, it never was the red telephone popularized in television and movies. Originally, it was a noisy and slow teletype machine. More recently, it's been upgraded to a modern facsimile machine. In a similar vein, we found The **OFFICIAL** US Government Telephone operator - (202)655-4000Number please..

INTEL ANNOUNCES NEW 80386SX/P9 CHIP

Intel Corporation has announced a new chip variously referred to as the **80386SX** or the **P9** chip. Early rumors that it would be a pin compatible 386 replacement for the **80286** microprocessors used in **IBM AT** class machines have proven false. The new chip will be completely compatible with the **80386** microprocessor. It will feature a 16-bit data bus like the one used in **AT** class machines. Unfortunately, Intel deliberately avoided providing the easy upgrade and chose to make the **80386SX** not pin compatible with either current **80386** or **80286** chips. They are marketing the chip as the basis for a new motherboard which will be slightly cheaper to implement. We look for someone to come up with a **80386SX** daughterboard to plug into the **80286** socket within weeks regardless of Intel's plans. The market for more microprocessor speed appears to be insatiable. Intel plans to ship sample quantities of a **33 MHz 80386** chip by the fourth quarter of this year and both a **40 MHz 80386** and the new **80486** microprocessors are currently on the drawing boards.

DOS 3.3 COMPATIBLE SOFTWARE IN ROM

Digital Research had a headlock on the disk operating software market with its **Control Program for Microcomputers** - usually referred to as **CP/M**. It was once as much of a standard as **PC/MS-DOS** is today. When **IBM** was trying to select an operating system for the PC, the president of Digital Research missed a business meeting with **IBM**. As a result, Microsoft got the contract and we all play **DOS** today. **DRI** has limped along with **CP/M/86** and some other products but the company's fortunes have waned harshly. Now, the scenario comes full circle with **DRI** offering a clone of **MS-DOS 3.3** titled **DR DOS in ROM**. This precludes the need for **DOS** Diskettes, **DOS** on the hard drive, and frees more **RAM** as well. The program also appears to offer some other enhancements including the ability to create logical drives as large as **512 MB** while retaining full compatibility with **MS-DOS**. Finally, **DRI** plans to market the product at **50-60%** of the current **MS-DOS** price.

XT EMULATOR FOR MAC II/SE

Insignia Solutions offers a software product for the Macintosh II/SE models titled **SOFT PC** allowing the Macintosh to simulate an **IBM XT** model computer. The software looks for all the world like a **640 KB IBM XT** with a **CGA** video adapter, a single floppy disk drive **A:**, up to three hard drives (**C,D,E**), a printer port (**LPT1**), and two com ports (**COM1/COM2**). The software even makes the Apple mouse appear to **IBM** software to be a Microsoft bus mouse. Effectively, the product puts the **XT** in a Macintosh window. Insignia Solutions Inc., 1255 Post Street, #625, San Francisco, CA 94109; (408)446-4992.

NEW UPGRADE FOR DESKLINK

Traveling Software has announced some new enhancements to its immensely popular **Desklink** communications package. **Desklink** has carved out a market niche by offering connectivity between two PCs via a null modem serial cable connected to the serial ports. This allows very rapid transfer of files between two computers at speeds of up to **115,000 bps**. The new version **2.0** of **Desklink** runs as a **TSR** popup program and can make use of either extended or expanded memory. The program provides dual print spooling allowing the user at either computer to spool a print job to a printer connected to the other computer without interrupting operations on the remote unit. All operations are performed in the background. The system uses ordinary four-wire telephone line to connect the two computers at distances of up to **100 feet**. The package lists for **\$169.95** and includes **25 feet** of **RJ11** cable, serial to **RJ11** connectors, and the software on both **3.5** and **5.25-inch** diskettes. This effectively provides a two-computer network. The company also now offers a **LAPLINK MAC** product to transfer data between any Macintosh **512/SE/II** computer and an **IBM** system at **56 kbps** for **\$139.95**. Traveling Software, 19310 North Creek Parkway, Bothell, WA 98011; (800)343-8080.

AUTOMATIC NUMBER IDENTIFICATION - WHAT'S NEEDED

The AT&T announcement of **Info I** and **Info II** services to **800 WATS** business customers brings up the question of when residential subscribers will be able to detect the number of the calling party and defend themselves from the anonymous voice at the other end of the telephone. In almost no other sense do we allow complete strangers to come into our home and demand our attention with an insistent and raucous ringing with as little control over the situation as we do with the telephone. It has somehow come to pass that businesses of all varieties feel that somehow they are perfectly within their rights in demanding free use of

YOUR telephone as **THEIR** advertising medium. They use it to **DEMAND** your attention so they can deliver a sales pitch for the whatever widget they happen to have on special. Automatic Number Identification will probably not prove a panacea in this battle for the telephone but it does give the residential customer some defense.

According to Ann Merrell of Mountain Bell, the technology does currently exist to provide this service and it is currently under study at US West. There is currently no schedule for introduction of this service.

Mountain Bell refers to the service as Calling Number Identification and it is one of a series of enhanced services known as **Customer Local Area Signalling Services (CLASS)**. The technology used is referred to as **Common Channel Signaling No. 7 (CCS7)** and involves some newer packet switching circuitry that makes switching of local telephone calls much cheaper for telephone companies. **CCS7** will allow a number of new services including the calling number delivery feature required for **ANI**.

Common Channel Signaling simply means that digital signals are transmitted over the same common channel as the analog voice signal. This is quite different from the emerging **Integrated Services Digital Network (ISDN)** which features a special digital channel specifically for the transmittal and monitoring of digital information by the telephone company. The point is, **ISDN** is **NOT** needed to implement **ANI/CNI**. It can be done with existing technology using your current telephone lines. We strongly suspect US West could deploy this service as soon as they figure out a way to market it.

ANI/CNI works by transmitting a digital data stream over the line during the first quiet interval in the ring sequence. Think of this as the window between the first and second rings. The data is most likely transmitted in a **CCITT Q.931** format and contains the telephone number of the calling party and usually some date/time information. Conceivably, it could also contain his name and address. At the customer end, a device is required to decode and use this information. This could be something as simple as an **LED** readout or as advanced as a **CRAY 3** computer with a database containing the name and number of everyone that ever heard the word telephone.

We found a fascinating company in San Diego called **Sanbar** that markets a tiny device they call their **NOTE-A-CALL ICLID** (**Incoming Call Line Identifier**). The device is about the size of a hand-held calculator and provides an **LED** readout of the telephone number, date, and time of the incoming call. It has a buffer memory capable of storing up to 30 calls. Not only can

you tell who's calling now, you can also tell who called while you were out by simply scrolling back through the buffer. Power is obtained from a **9V** alkaline battery good for six months of operation. The unit is installed between the line and the telephone using standard **RJ-11** connectors. The most amazing thing about this little device is the price - **\$60** American money. The company also makes a PC-based **PBX** system with extremely impressive features. Note that these devices simply do not work if the telephone company is not transmitting the data over the wires using the **CSS7** switch. Has Mountain Bell already installed **CSS7** without telling anybody? Who knows... **Sanbar Corporation, 9999 Muirlands Parkway, PO Box 19656, Irvine, CA 92713; (714)855-9911**

USA TODAY NEWSPAPER BBS DISTRIBUTION PROGRAM CONTINUED

Gannett New Media concluded a 90-day experiment in electronic news distribution in the Denver area this past June 30. The project demonstrated a low cost distribution method for delivering the electronic version of USA Today Newspaper Decisionline Update to local area BBS each weekday morning by 8:00 AM. By porting the product through a single distribution point, Gannett was able to hold costs to a level allowing a special **\$36** quarterly rate to participating system operators. A total of 12 local BBS signed up for the service - allowing their regular users access to the newspaper each day at no charge. According to Sandy Lunner, Sales Manager for the product, the level of participation by local bulletin boards qualified the experiment as a success. As a result, she announced continuation of the program indefinitely. The **\$12** monthly rate for free hobby BBS will be retained. Pay or subscriber BBS will be able to carry the product at a slightly higher rate.

The newspaper is presented in 18 topical categories such as Business Law, Real Estate, Banking, Insurance, Telecommunications, Technology, International News, Sports, Weather, Marketing Trends, etc. Most of the participating systems have developed attractive menuing systems allowing users to easily select and read those topics of interest.

The USA Today file is downloaded each morning at **5:00 AM** and separated into 18 topical files. These files are archived into a single **ARC** file of roughly **70 KB** for distribution. A series of communications program scripts and Fidonet compatible file forwarding programs are used to distribute the file to individual systems in the area with all deliveries completed by **8:00 AM** most mornings. Most systems use automatic "event" programs to detect arrival of the file and subsequently unpack the 18 files into the appropriate

menu areas. Users can then dial into the boards and read the file categories of interest. According to several local sysops, the electronic newspaper is developing a following among users who dial up each day to read the morning paper. The original dozen BBS participating in the service are listed below.

USA TODAY BBS	
BBS	PHONE
COMM-NET	340-2473
CYBER-ZONE	860-0126
DAY'S END	650-5636
DENVER TECH COMPUTERS	799-4813
INVESTMENT LOUNGE	759-3721
MICROLINK B	972-9600
NONAME BBS	988-5765
ON-LINE CONSULTING	449-5251
PCJR-NET	789-4610
PHOENIX TBBS	841-9570
TERUS REGUSER	341-1404
THIS END UP	430-1585

Additional BBS from around the nation are joining the USA distribution network - most using the file transfer technology developed in Fidonet. System operators who would like to carry USA Today on-line may sign up for the program by calling (303)973-6038 to arrange delivery details. Bulletin boards located outside the immediate Denver local calling area may also incur normal long distance telephone charges.

CELLULAR 286 LAPTOP COMPUTER

Intelligence Technology Corporation of Dallas has been manufacturing laptop computers since 1981. The company recently introduced a new laptop computer featuring a built-in cellular telephone and error correcting 1200 bps modem making it the first truly portable wireless data terminal. The entire package weighs in at 19 pounds including an accompanying cellular handset, separate telephone headset, and batteries. The unit is no slouch as a computer either with a 12 MHz, 0 wait state 80286 microprocessor, 40 MB 30 msec access hard drive, 1.44 MB/720 KB 3.5-inch floppy drive, 640 KB of RAM and a striking 10.5-inch backlit supertwist 640x400 dot resolution EGA screen in eight shades of grey. The unit runs on a 12 VDC auto battery, 115/220 VAC power, or the internal batteries for as long as four hours. The system can operate while recharging. The unit features a built-in

antenna. To top it all off, the box sports a single full size 16-bit AT slot for add-on circuit cards.

The cellular phone is not an attached suitcase sized unit. Rather, it is actually built into the laptop unit. You can dial the phone from the keyboard and actually talk over a built-in speaker phone. Two jacks on the side of the unit accommodate the standard cellular handset and the telephone headset. These aren't options - they come with the unit. The built-in modem currently featured is 1200 baud and sports a proprietary algorithm in hardware to perform the error correction necessary to deal with overhead power lines and the inevitable "hand-off" disruptions when moving from one cell to another while traveling. The modem uses standard Hayes AT commands and is compatible with all standard communications packages. ITC has been using the unit with MIRROR, a CROSSTALK work alike. According to company president Walker C. Morris, a 2400 bps upgrade should be available soon.

This cellular telephone/modem/laptop combination is perfect for anyone working in the field who may need access to home office computers or databases from remote locations. Real Estate professionals, hazardous materials/firefighting/medical teams, field auditors, and geologists are all natural markets for this device.



A ruggedized **MILSTD 810-D** configuration is available for particularly hostile duty.

This package is so complete, it could conceivably be configured as a mobile, roving bulletin board. It operates from airplanes, automobiles, boats, and conceivably, even from Texas. Mr. Morris is perhaps justifiably proud of this unit. The laptop travels in quantity for around **\$4200** and single evaluation units run a brisk **\$7295**. But, for those on the go that just have to be connected, this unit could prove to be a bargain. Intelligence Technology Corporation, 16526 Westgrove, Dallas, TX 75248; (800)356-3493 (voice); (214)380-0508 (FAX).

BUSINESS WEEK 1000 AVAILABLE ON DISK

Business Week Magazine publishes a closely followed list of top 1000 corporations in the United States each year. They now offer this data in a simple menu-driven database program capable of exporting the files to dBase or Lotus 123 formats. Information is provided on the companies products, type of business, address, telephone, revenues, and earnings. The program travels from them to you for **\$199**. Business Week, 1221 Avenue of the Americas, New York, NY 10020; (212)512-2000.

CABLE TV PC INFO SERVICE

McGraw Hill and TCI Cablevision have joined forces to form **X*PRESS Information Services Ltd** of Denver. As of June 13, the company began marketing an absolutely amazing wealth of information to owners of personal computers throughout the Denver Metro area and across the nation. The notable difference with the **X*PRESS** service is that it does not use the telephone and it is essentially provided free of charge. The product is carried as part of the basic service package by all Denver area cable television companies.

The company actually provides two services - **X*PRESS X*CHANGE** and **X*PRESS EXecutive**. The **X*CHANGE** service is transmitted at no additional charge over the cable of United Cable, Mile Hi Cablevision, Jones Intercable, and TCI Cable of Boulder as well as **427** other cable TV sites throughout the United States and Canada. Locally, the service is available to **240,000** cable subscribers at no charge beyond the normal basic access cable charges..

X*CHANGE provides a wealth of information over cable in a continuously repeating loop of data that updates in each **15-20** minute period (**20-30 MB** of information in series). Services include news services as

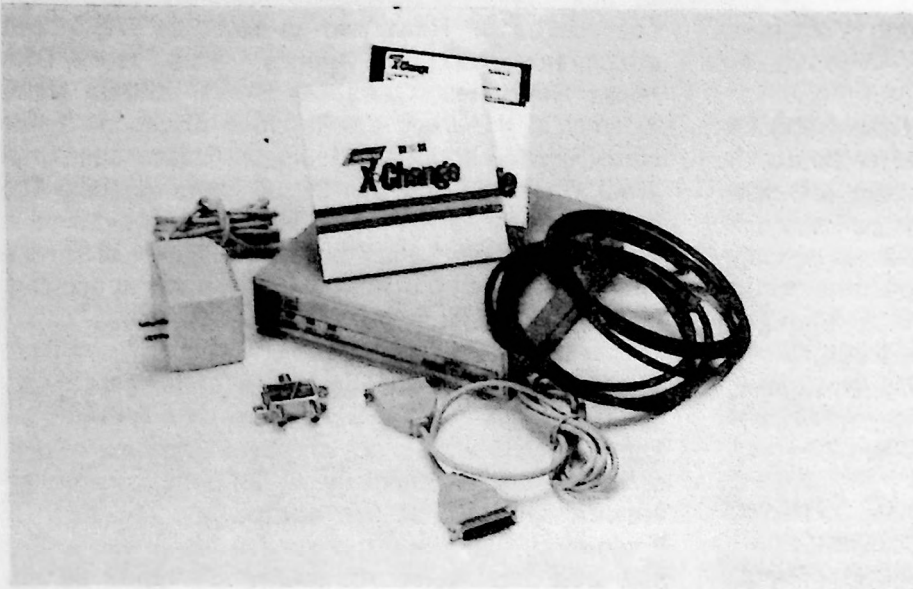
common as AP News and as exotic as TASS news agency from the USSR, Agence France Presse, CNN News Headlines, Canadian Press, Xinhua News Agency in the People's Republic of China, Kyodo News Service of Japan, Deutsche Presse Agentur of West Germany, and the OPEC News Agency. The Notimex news service from Mexico City is received in Spanish. Standard and Poors Stock Ticker III service provides quotes on over **13,000** securities at opening, mid-day, and close of market.

The service also provides weather information, sports updates, and a special technical section with articles from Copley News Service and Byte Magazine on personal computing technology. At the demonstration we viewed recently at the company's location in Englewood, we found this service alone was extensive and captivating. An on-line TV guide details scheduling for major networks and cable services such as WTBS, CNN, etc. A Washington Post Writers group features columns by writers such as George Will.

Essentially, **X*PRESS** gathers the information via live feeds from a variety of sources and combines it all into the transmitted information series from a **VAX MICRO II** Computer. The output is transmitted via an uplink facility in Greenwood Village to the **Galaxy I Transponder VII (G1-7)** satellite as a sideband carrier of the **Cable News Network (CNN)** transmission. Cable TV head-ends at **427** locations throughout North America receive the relayed transmission and convert the data into a modulated FM subcarrier to transmit over the cable. In the Denver area this sub-carrier operates at **72.6 MHz**.

At the home end, an FM demodulator is required to convert the FM transmission into a **9600 bps RS-232** format which is connected to the serial port (**COM1/COM2**) on your computer. **X*PRESS** markets an FM demodulator kit that includes software, the demodulator, a cable splitter, and some coaxial cable for **\$125**. The kit is available for Apple IIe, IIc, and all Macintosh models, the Atari ST series, and all IBM compatible units.

The **20 to 30 MB** of info transmitted takes about **15** minutes to receive even at **9600 bps**. While this sounds like quite a delay, the interactive element of the product is actually in the software at the receiving end. It continuously receives, monitors, and collects the stream of information and can be tailored to select specific items or even news by a configurable file of keywords. The user selects items from a menu for viewing and generally they are available immediately. Some items require a short wait that can vary up to the full **15** minutes - worst case. Software also allows



up to **128** individual stocks to be tracked. Quotes are snagged from the stream that transmits at market opening, mid-day, and close, and held for viewing later.

The **X*PRESS EXecutive** service is geared more toward the serious investor and includes everything in the **X*CHANGE** service. Additionally, the **S&P** stock quotes are provided on a **15** minute delay from market and updates continuously rather than three times daily. With the inherent **15** minute transmission delay, you could wait as long as **30** minutes after a market transaction before seeing the price. Effectively, quotes average **24** minutes from market according to marketing representative Tom Carlson.

The **EXecutive** service also provides much more extensive financial news services than **X*CHANGE** service including BusinessWire, Invest/Net Group's Insider Trading Monitor, McGraw-Hill Inc. Business News, PR Newswire, and Standard & Poor's Corporation Market Movers, Market Commentary, Market-Scope, Economy Watch, and Today's Interest Rates detailing Federal Funds, T-Bills, and T-Bonds.

While **X*CHANGE** is available at no charge, **EXecutive** costs **\$19.95** monthly. The service is scrambled and a **\$100** plug-in descrambler module must be added to the **\$125** FM demodulator kit to receive the service. This totals an initial cost of **\$225** plus **\$19.95** for a service that could effectively replace costly prime-time connect charges to Reuters or Dow Jones. Remember that **X*CHANGE** and **EXecutive** are available to you for all or any part of the **24** hours we customarily allot to a day at the same flat rate.

How can these services be made available at such a low cost? According to Mr. Carlson, cable tv is an inherently efficient transmission medium. Telephone

companies are cut entirely out of the picture with all long distance transmission occurring via satellite. The **X*CHANGE** service is actually purchased by individual cable firms to enhance the value of the basic cable service. **X*PRESS** gains most of its revenues from this and the FM demodulators are actually provided at or slightly below cost.

Incredibly, **X*PRESS** even has provisions for those who own a satellite dish rather than cable tv. Essentially, you must have a Video Cypher 2 descrambler and a ten-foot dish is recommended. **X*PRESS** charges **\$350** for an access kit consisting of a General Instrument Info-Cypher unit, demodulator, cables, etc. A **\$32.50** monthly charge is levied on this service which automatically includes both **X*CHANGE** and **EXecutive**. Effectively, you can retire deep into the heart of the high Rockies, mount a dish on the side of the mountain, and watch your stock portfolio swell in near real-time from the comfort of your patio for **\$32.50** monthly.

X*PRESS seems quite interested in courting the PC community. Mr. Carlson expressed a strong interest in giving a presentation to interested user groups. In fact, groups that do host such a demo will receive a whopping **25%** discount on the FM demodulator kits bringing the cost of the **X*CHANGE** service down to well under **\$100**. Additionally, **X*PRESS** seemed notably devoid of the usual aversion high-tech companies often have to the technically inclined user. In fact, **X*PRESS** specifically courts developers. For **\$25** and a non-disclosure agreement, you can receive a software developers hand book describing details of the transmitted data stream and how to decode it. If you do happen to produce an interesting product employing the transmission, **X*PRESS** may have an interest in helping you market it. The company already markets an add-on product for **EXecutive** subscribers titled **ProQuote II** with high/low alarms, moving averages, and some incredible trendline graph capabilities. The software provides a direct port of data to Lotus 123. The company appears to be interested in providing additional products.

Overall, we found the demonstration of **X*CHANGE** and **EXecutive** overwhelming and enormously exciting in breadth, quality, and detail. For most PC users, an investment of less than **\$100** brings access to an

information service in many ways richer than any of the on-line commercial services such as Compuserve, The Source, and even Dow Jones News, and at essentially no charge. Your on-line commercial action can then be limited to interactive activities such as E-Mail which the one-way nature of X*CHANGE does not allow. For serious investors, the service brings 15 minute delayed quotes to your office 24 hours daily with business news for a ridiculously low monthly charge.

Our experiences with cable tv service have been abysmal and Jones Intercable, which serves our area, has developed one of the most complex and thoroughly bizarre systems of charging imaginable. They've essentially arranged a panoply of installation, converter, movie channels, waived fees conditional on accepting other services, and other little items in such a complex array of BS we feel we are simply unable to obtain cable tv service. However, if you do happen to live in an area where you can get cable tv, the X*PRESS Information service sounds like an absolute winner. Our highest recommendation.

X*PRESS Information Services, Ltd., PO Box 4153, Englewood, CO 80155; (800)7PC-NEWS;

DAT TAPE STORAGE FOR PC

According to the June Electronics Magazine, Sony Corporation of Tokyo and Hewlett-Packard Co. of Palo Alto have jointly developed a Digital-Audio-Tape (DAT) format capable of storing 1.3 gigabytes (1300 MB) of data on a single DAT tape cartridge. Sample systems from HP and Sony should be reaching customers by the end of the year and will feature a data transfer rate of 183 KB per second. Sony expects a total market of one million units by 1992. The new DAT device could conceivably back up a 40 MB hard disk in less than 5 minutes with total reliability for all practical purposes. Further, the 1.3 GB capacity would allow over 30 backups of that same 40 MB drive on a single tape cassette. Between the new DAT technology, and Maxtor's 1 Gigabyte read/write compact laser disk due out in October 1988, data storage as we know it should change dramatically over the next two years. Don't spend a fortune on hard disk drive technology now.

GOSCRIP - POSTSCRIPT ON OTHER PRINTERS

Lasergo Inc. of San Diego introduces a program titled Lasergo to print postscript print files on virtually any non-postscript equipped printer. The software emulator converts the commands of the popular Adobe Systems Postscript language to bit mapped graphics for printing on a variety of laser, inkjet, and

dot matrix printers. The process is very slow, but if you occasionally need to print out a postscript file on a dot matrix, this might just be the ticket. The package is priced at \$195. Lasergo Inc., 9235 Trade Place #A, San Diego, CA 92126; (619)530-2400.

AT&T INTROS AUTOMATIC NUMBER IDENTIFICATION

According to a recent report by INBOUND/OUTBOUND Magazine, American Telephone & Telegraph has introduced two new 800 WATS line services titled INFO I and INFO II respectively. The INFO I service allows callers to dial an 800 number. The service informs the 800 subscriber the telephone number that dialed. The immediate application of INFO I is used by a cable TV channel called Viewers Choice. Essentially, the cable subscriber selects his pay for play movie by dialing an 800 INFO I number. The system transmits the calling parties telephone number to Viewers Choice. The computer at Viewers Choice looks up the cable viewers record to make sure all billing is up to date, and transmits an activating signal down the cable to the scrambler in the viewers home - unlocking the channel sync. Round trip from first telephone ring to clear picture - a startling three seconds. INFO I is designed to collect thousands of calls from around the country with remarkable speed.

The INFO II service works with AT&Ts \$250,000 System 85 PBX/3B Computer. Essentially, it too uses Automatic Number Identification (ANI) to inform you of the number your incoming call originates from. This can be coupled with your in-house customer database so that on incoming calls, your system automatically looks up the calling customer and places their vital stats on the screen in front of you while you answer the telephone. The service involves an additional three cent per call charge.

Essentially, ANI works as a data stream received over the data channel of an Integrated Services Digital Network (ISDN) connection. The data conforms to the CCITT (Consultatif Committee Internationale Telephone and Telegraphique) standard Q.931 protocol for those most intensely interested. John Leonard is project manager for AT&T (800)257-4636.

DIGITAL PAPER STORAGE MEDIUM

With the new Digital-Audio Tape devices and erasable compact laser disk devices coming to market, one might assume we are in the midst of a not so quiet revolution in storage technology. And it keeps coming. The latest? Digital paper. ICI Electronics of London has developed a type of flexible polyester film sensitive to infrared light. It can be used to store optical in-

formation much as the optical disks do but at ridiculously high densities. Data can be archived and stored for up to 15 years at a cost estimated at 1/2 cent per MB. Bernoulli Optical Systems Corporation in Boulder is rumored to be working on a 5 1/4 removable media unit similar to the present Bernoulli drives but with a storage capacity of 1 Gigabyte using the digital paper as disk media. Other manufacturers are looking at tape drive units storing hundreds of gigabytes of data. Bernoulli Optical Systems, 5700 Flatiron Parkway, Boulder, CO 80301

LOCAL ACCESS

COMPUTER CONSULTANT'S BBS

Lee Lasson lives up in Estes Park Colorado near the Rocky Mountain National Park. With few salt mines to work in and few slave labor teams working on pyramids and so forth in the immediate area, Lee makes his living as a computer consultant. As part of his efforts to get the word out about his available services, Lee inaugurated the **ON-LINE CONSULTING BBS 104/45** in June 1987. Although located in Estes Park, the board operates on a metro FX line at (303)449-5251. This makes it a local call for Denver residents and a considerable expense for Mr. Lasson. Metro lines typically run \$175-\$200 monthly in that area.

The board runs on an AT class computer using Opus software and a Multitech MultiModem 224E 24 hours daily. Notably, **ON-LINE CONSULTING** offers over 50 Fidonet echomail areas. Some of the more popular areas cover topics such as Desktop Publishing, Communications, the Word Perfect Program, CD-ROM Technology, Medicine, and many more. This comprises one of the largest collections of echomail conferences available in the area. Essentially, these echomail areas carry conversations on a single topic among individuals geographically located all over the nation. The collection of messages travels at night via a network of some 3000 BBS around the country. If you enter a request for technical information in an appropriate topic area, you will usually receive a reply in that area by the next day.

ON-LINE CONSULTING provides a wealth of other information. The USA Today Newspaper is featured online for all users to dial in and peruse at no cost. A fairly well collected assortment of desktop publishing software and clipart is available in the files sections.

If you should happen to log onto this board and Mr. Lasson drops into chat mode, you will be treated to a special chat utility that essentially splits the screen. You type in the bottom half and Lee types in the top half. Both can see what the other is typing in real time.

This would seem to be a big help when engaging in on-line conversations. Actually, it will drive you to distraction. The program is a marvelous example of a really well executed solution out in hot pursuit of a non-problem. Unless you were gifted with one of those rare minds that allows you to perform multiple complex tasks simultaneously, this program will cause headaches. Since we can't even walk and chew gum at the same time without risking a medical emergency, we'll probably ask Lee to kill the utility while chatting. Some users may want to examine this program as a matter of curiosity. It is at least original and appears well done.

All the above notwithstanding, by far the most intriguing element of this system is its affiliation with computer consultants. Mr. Lasson has actually created an on-line database containing entries for over 100 consultants operating in the Denver area. The database includes each consultants name, address, telephone number. It also includes a synopsis of the particular skills or expertise the consultant has to offer such as Lotus 123 macros, dBase III+ programming, C language programming for communications, etc. Additionally, Mr. Lasson has married this text database to a text retrieval program that allows you to enter a simple English question. It selects keywords from the entered text and performs a very rapid search of a text file to find a match. Mr. Lasson uses a TTY version of the program that can be used on-line. If you enter **I NEED A DBASE PROGRAMMER WITH EXPERIENCE IN A MEDICAL OFFICE - LITTLETON AREA** the program will attempt to find a match from the 100 plus entries in the file. On the other hand, if you enter **I NEED A PROGRAMMER WITH SIX DOCTORATE DEGREES AND 75 YEARS OF EXPERIENCE ON CRAY 3 COMPUTERS USED IN A BROWNIE SCOUT TROOP ENVIRONMENT WILLING TO WORK FOR \$3 AN HOUR AND RELOCATE AT OWN EXPENSE TO THE BRONX NYC** you may enjoy some challenging difficulties. [challenging - a word widely used in Fortune 500 corporations to mean "all screwed up" - origin unknown - Ed.]

If Mr. Lasson's consulting practice is as well executed as his **ON-LINE CONSULTING BBS**, we would posit that he's doing quite well for himself.

OUTSTANDING SHAREWARE LIBRARY

Tom Getty of GDP Technologies runs a BBS using version 1.12 of the Wildcat BBS software program. The board is available at (303)673-9470. We did a brief story on Tom's board a few issues back. He told us then that he intended to build the best shareware software library available on any BBS in the area. We listened politely, uploaded the then just released Pro-

Comm Plus Test Drive program to get things rolling, and moved on.

Revisiting Mr. Getty's BBS four short months later, we found that incredibly, he has developed a **SHAREWARE LIBRARY WITHOUT PEER IN THE DENVER AREA**. [That should draw some mail eh?] How did he do it? We're guessing hard work.

The GDP library is **NOT** the largest we've seen in the area. But it is the best. Every file on this system is there for a reason. Tom spends almost as much time deleting files as he does adding them. Download counts are carefully monitored. All files are appropriately stored in rational categories and each file is clearly, concisely, and accurately labeled with descriptive file entries that give the user an indication of what the program is, what it does, and why you might want it.

The board does have a decided bias towards programmers. File and message areas for C Language, Pascal, and Assembly Language programmers are prominent. This is understandable given Mr. Getty's interest and vocation as programmer.

Good BBS sysops are without fail good writers (though the reverse is not necessarily true) and we view BBS as a form of publication. Mr. Getty recently received notification from Dr. Dobb's Journal that his recent article submission on the subject of memory management techniques had been accepted for publication. Dr. Dobb's journal is a small, though in programming circles, prestigious publication devoted to relatively esoteric programming topics.

Non-programmers will likely find some goodies here also. The file areas contain some excellent DOS utilities as well as some fascinating word processing and communications packages. We noted **HYPER.ARC**, a hypercard-like text manipulator for the PC; **MINDREADER.ARC**, a word processor that finishes your words and sentences for you before you can complete them (normally, my wife handles that); and the latest version of **PC Outline**, a popup outlining utility.

Additionally, Mr. Getty features the entire PC magazine utility software library - every utility program ever listed in this magazine is collected here in one file area. And Mr. Getty is so conscientious about picking up the latest utilities as soon as they publish, you may find it quicker, and certainly less expensive, to get these files from his BBS than from PC Magazine's Interactive Reader Service.

SECOND ANNUAL COMPUTER BAZAAR AND FLEA MARKET

**SATURDAY, AUGUST 27
NATIONAL GUARD ARMORY
55 SOUTH PATOMAC, AURORA**

10:00 AM to 7:00 PM

TICKETS \$1.50 IN ADVANCE - \$2.50 AT DOOR

SPONSORED BY:

COMM-NET

**COL.. COMMODORE COMPUTER CLUB
COLORADO PET USERS GROUP**

The second annual computer bazaar and flea market will be held Saturday, August 27, 1988 at the National Guard Armory in Aurora Colorado. This is the largest locally sponsored computer show in the Denver area featuring vendors and displays representing all computer types, brands, operating systems, software, hardware, and accessories including IBM, Amiga, Apple, Commodore, Tandy, and Macintosh. No item too large or small. If you have it and want to sell it, this is the place.

Last year's show drew over 2400 computer enthusiasts from the surrounding area with displays by 44 vendors. Attendance this year is expected to be even higher. Reservations are now being taken for corporate display areas, commercial display space, and individual sales tables at rates beginning at \$25 depending on size and location. Space is limited so register early.

Complete snack bar facilities will be available with food, beer, and soft drinks. Numerous door prizes and show specials will be available.

Address requests for further information, advance ticket sales, or space reservations to:

COMM-NET

**676 South Quentin St
Aurora, CO 80012
(303)341-4266**

In any event, if you need shareware, this is the premier place to find the very best without wading through thousands of titles. It's all prescreened, catalogued, and classified for you. We think so highly of this mans skills as software librarian that we anxiously await the **GETTY SHAREWARE LIBRARY CD-ROM** though it hasn't quite dawned on Mr. Getty to put one together yet... perhaps it will.

LONG DISTANCE USA

INFOWORLD MAGAZINE BBS

InfoWorld Magazine has been one of the computer industry's top news weeklies for at least the past seven years. The magazine is currently researching the various electronic bulletin board system software for a product comparison scheduled to appear in the magazine the middle of this month. As part of this effort, they are running two bulletin boards with two lines each and rotating the BBS software used on a weekly basis. Whatever it looks like when you call in - it will look different soon. The group is posting some interesting programs such as their **AUTOBENCH TEST** program and some indexes to past product reviews. Each board features one line using a **Hayes V Series 9600** bps modem and the other line using a **US Robotics Courier HST 9600**. We take that as a tacit admission that there are now two serious contenders for 9600 bps operation. If a single, solitary, dark-horse, nobody manufacturer would come out with a well-built modem compatible with BOTH the Hayes and the USR, the logjam in 9600 bps would be over and someone would be very, very, wealthy in remarkably short order. The InfoWorld BBS operate using the Hayes Standard at (415)327-7634/7636 and with the blessings of USR at (415)327-7629/7635.

SILICON VALLEY INFO SERVICE

The San Jose Public Library has produced a free information service titled **SILICON VALLEY INFORMATION CENTER CATALOG** operating at (408)277-5758. The service provides citations to books, magazines, newspaper articles, archival materials, and other public references to high technology industries and related issues regarding the Silicon Valley.

The text of the documents is not available on-line and while they claim to have a document delivery service, we would imagine they might be somewhat reluctant to deliver anything to the Denver area. The service provides a brief citation on each article listing the author, publication, date, and a bit of what it was about. The service resembles nothing so much as our own Colorado Association of Research Libraries

(CARL) that maintains an on-line card catalog for Colorado libraries.

Effectively, the San Jose Library's service is much more focused on the high technology area. We found most citations came from computer technology and investment magazines, weeklies, and newsletters including Infoworld, ComputerWorld, etc. Effectively, this service comprises an on-line magazine index to all the major computer magazines - an absolutely cunning idea in our opinion.

We've recently been looking at Maxtor Corporation with interest because of their new erasable compact disk optical drives. Incredibly, the Silicon Valley Info Center listed 52 entries on this company. Many were on CD ROM activity by the company although one entry was for an item in a California stock investment newsletter from this past May urging us to Buy Maxtor. We wish we had.

To try to confuse the software, which seems to be titled DYNIX, The Ultimate Computer System, we entered JOBS as a searchword knowing that many articles center on the gain, loss, or development of jobs (employment). We also knew that Steve Jobs was quite naturally a wheel in the valley having founded Apple Computer. Although the system did list references to each in a quite intermixed fashion, it really did show off the system. The entries were listed in date order and you could readily identify which referred to employment and which to the big Steve. Enter the number of your suspected target to have a closer look.

We suspect that for some difficult articles, this service will become a research source for **Denver PC Boardwatch** - despite the long distance charges. San Jose Public Library, 180 West San Carlos St., San Jose, CA 95113; (408)277-5758.

AUTOMOTIVE DATABASE

We recently heard of an on-line database for automechanics run by Jim Bates of the Wells Manufacturing Corporation in Fond du Lac Wisconsin. We dialed up Mr. Bates' service at (414)923-5514. The system uses a somewhat unusual 7 data bits, Even parity, and 1 stop bit although it seems to use TBBS software. Once on the board, we were treated to a brief and rather crudely worded information file indicating that the service offered general explanations of automotive systems, information on component parts including location, function, testing, service, and replacement intervals. The service claims input by "some of the industries leading writers". Actually we'll never know. The operator charges a bizarre \$12 fee for a one year/24 call access. He does offer on-line

signup but it is entirely meaningless because to access the system, you must send him a personal check for the full amount - no credit cards. **TWO WEEKS** after he receives it, you will be granted access to the database. Meanwhile, rest assured that it will be worth it. If you do lose your user number or password, he will send you another for another \$2/two weeks.

Judging by the writing style of the sparsely oddball info screens, we would say that this service is singularly unlikely to add up to much. But you just never know. We spent six minutes on-line long distance, answered everything he wanted in the affirmative, and we still don't know what this system is about. Our curiosity was up but our threshold level for BS was way down that evening. The concept is marvelous if executed in depth and in detail. We'll never know. If you find out what this database does, give us a ring. Jim Bates, PO Box 70, Fond du Lac, WI 54935; (414)922-5900 (voice).

CD-ROM BBS

Bob Hall of Oklahoma City has been involved with PC technology and publications for some time. Currently, he serves as technical director for Ellis Enterprises Incorporated. The company markets various reference works on CD-ROM (Compact Disk - Read Only Memory). Notably, their primary product is **THE BIBLE LIBRARY**. This \$595 CD-ROM disk contains the full text of nine different translations of the Bible including the American Standard, King James Version, Literal Translation, Living Bible, New International Version, New King James, Revised Standard Version, Simple English New Testament, and Transliterated Hebrew-Greek. Additionally, the disk contains 27 other reference works including concordances, dictionaries of biblical terms, word studies, and sermon outlines. Over 350 MB of biblical data is stored on this disk - roughly the same capacity as 900 floppy disks - a pile of diskettes just slightly over 5 feet tall. The complete library, if purchased in the printed version elsewhere, would total over \$1000. The company also markets a 552 MB Hitachi CD-ROM drive at a competitively priced \$895.

Mr. Hall also runs a bulletin board system titled **OKC CD-ROM BBS 147/23** at (405)236-3750. The board is currently converting from Opus software to Quick BBS. Once the shakedown cruise is completed, **OKC CD-ROM** will feature the **PC-SIG** shareware library for download from an on-line CD-ROM player.

With Mr. Hall's involvement in CD-ROMs, it's not surprising that he hosts the national Fidonet echomail conference on CD-ROM technology. Locally, this echomail conference is carried on Bart Henthorn's

TERUS REGUSER BBS 104/44 at (303)341-1404 or Lee Lasson's **ON-LINE CONSULTING 104/45** operating at (303)449-5251. For those unfamiliar with the echomail concept, the CD-ROM echo conference is a special message area that is carried from BBS to BBS across the nation in the wee hours of the morning. As a result, you could dial one of these two Denver local BBS and enter a message to Mr. Hall in the CD-ROM echomail conference at no charge. The message would reach **OKC CD-ROM BBS 147/23** by morning. Ellis Enterprises, Inc., 225 Northwest 13th St., Oklahoma City, OK 73103; (405)235-7660 (voice).

AT&T PC SUPPORT BBS

AT&T operates a free BBS for the dissemination of information regarding their line of personal computers. The system operates, quite naturally enough, on an **AT&T PC 6300** located in Plainfield New Jersey. The system uses PC Board software at modem speeds of 1200 and 2400 bps. The system is available via three lines at (201)769-6397, (201)769-5616 and (210)668-8573. First time callers are allowed a bit of leeway and the initial registration process is not too onerous. To really get at the good info, you must fill out a questionnaire that is automatically reviewed at noon or midnight for an upgrade in user status. The board is oriented toward tips and support text for the AT&T line and very little is available for download. If you do operate an AT&T PC, given its many quirks, you might want to try this service out. The company also provides a toll-free voice support line at (800)922-0354.

MODEL RAILROAD BBS

Decker Dogget of Mason Ohio has operated a BBS devoted to model railroading since 1984. The board is **108/96** in the net and operates at (513)398-0928. He's moved from the original Apple hardware to IBM and gone through several software transitions. He's also added topics on genealogy and radio control but the main theme remains model railroading. A modelers event calendar is prominently displayed on his bulletin menu and the board maintains a railroaders swap and sell area as well. Additionally, the file area contains programs to simulate a model railroad on screen. Modelers can try various layouts in a computer simulation before actually going to the trouble of putting the pieces together. We understand there are also commercial programs to actually use a PC to operate a model railroad. We noted the occurrence of the **8TH GREENVILLE ALL TRAIN FLEA MARKET** coming up this September 20 as well as the **October 11 QUEEN CITY RAILRODIANA SHOW** at Reading Road Armory. Wouldn't miss em for the world Decker. Decker Dogget, PO Box 9, Mason, OH 45040; (513)398-3957.

SHAREWARE

NEW PKARC RELEASE

Phil Katz of PKWare Inc. fame has quite a bit going on these days. As of June 1, PKWare released version 3.6 of the enormously popular shareware program **PKARC**. The new version is available under the file name **PK36.EXE**. The author claims speed improvements of up to 25% in the new release.

Over the past few years, archiving utilities have made the use of modems much easier. System Enhancement Associates (**SEA**) popularized the archival method with their **ARC** program originally. The utility takes a group of files and combines/compresses them into a single file with the extension **.ARC**. The file is often 60% of the size of the original files. The single title can then easily be transmitted via modem to another system. At the other end, another **ARC** utility must be used to extract the original files from the **.ARC** archival file.

Mr. Katz produced **PKARC/PKXARC** programs that incorporated all the various compression techniques used in **SEAs** product and added a technique he called squashing. The resulting utility was largely compatible with **SEAs** program and very quickly displaced it. The reason was that the **PK** offering operated at dramatically faster speeds than the **SEA** product. A better mouse trap.

Unfortunately, that may not be all there is to it. Thom Henderson/System Enhancement Associates has filed suit in the US District Court in Milwaukee charging copyright and trademark infringement. The trademark issue revolves around the use of the **ARC** term in **PKARC** and **PKXARC**. The copyright issue initially revolved around the products similar appearance and interface. Informed sources now speculate that whole blocks of code may bear a striking resemblance between the two products.

Apparently, **SEA** demanded license fees from **PKWARE** as early as last December and was rebuffed. Despite repeated telephone calls, Mr. Katz remained unavailable for comment and his employees were "uncomfortable" discussing anything about the company with anyone.

The new **PK36.EXE** is available for download locally from GDP Technologies BBS at (303)673-9470. PKWare Inc., 7032 Ardara Ave., Glendale, WI 53209; (414)352-7176 (data)

GT POWER VERSION 14.01 RELEASED

P&M Software released versions 14.00 and 14.01 of their **GT POWER** communications program within days of each other. The 14.00 release included a new directory format, full keyboard macros, exploding windows, 16 new script commands, and an improved status line. The 14.01 released fixes bug that caused difficulties with CGA displays.

The most notable change was in author Paul Meines continued experimentation with various techniques to force users of the program to send the \$50 fee. In 13.00, he incorporated a ridiculous counter algorithm that locked up the host computer after 150 uses. To reach 150 uses in the seven month period between 13.00 and 14.00 would have required at least daily usage. The ploy caused Meines considerable bad press and we understand registrations dropped precipitously. A "fix" program was on the street within ten days of the release of version 13.00.

In the new 14.00 release, Mr. Meines removed the offending counter and replaced it with another equally bizarre security system. This time a counter increases the initialization time of the program by 0.20 seconds with each usage. Although the delay is childish, it also prevents usage of the program to run scripts from the command line.

Truthfully, GT Power has developed nicely from what was once a large, clumsy, slow product to what is now a much quicker, more graceful, full-featured communications package. The host mode is used as a BBS system in many installations nationwide. Netmail capability, though non-standard with other networks is at least available and a GT Power net is operating. As a terminal package, it always had one of the best dialing directories available with a 1000 number capacity. The script language is clean, clear, easy to learn, and operates well. The program features one of the widest ranges of file transfer protocols available in communications software. And the newer versions have become faster while competitive products such as ProComm seem to have grown slower and larger.

While we continue to be irritated by Mr. Meines pre-adolescent attitude toward his users and dumbfounded by his incredible lack of comprehension of the rationale behind shareware marketing, the fact is that the GT Power communication package is a bargain at \$50. We must recommend the program despite our intense distaste for those who produce it. P&M Software Company, 9350 Country Creek #30, Houston, TX 77036; (713)772-2090 (BBS). Available locally from **SNARFQUEST BBS 104/604** at (303)973-9402.

CARL ADDS ADDITIONAL ACCESS LINES.

One of the finest services available for Denver area data communications enthusiasts is the **Colorado Association of Research Libraries (CARL)** on-line card catalog. Essentially, the service allows users to dial in free of charge and search the entire Colorado library system by author, title, or search word on any imaginable subject. The search results in citations to titles, authors, library locations, and call numbers. The service even indicates whether the publication selected is checked out or not.

The **CARL** service does not maintain the text of these books and magazines on-line of course. But, it does serve as a valuable research tool for anyone - especially students - to locate reference materials of interest from the comfort of home. They can then stop by and pick up the items at their convenience. Additionally, **CARL** has the entire text of the *Grolliers Academic American Encyclopedia* on-line. This is a surcharge service on Compuserve. It's totally free on **CARL**. **CARL** now has a **DENVER** database on-line. In addition to a myriad of other things, this database can help you find the name, address, and telephone number of any group operating in the area for any purpose. **CARL** has become so popular in recent months, they've added new access lines as well as the technology necessary to adjust baud rates to incoming calls. The new numbers:

(303)830-2199 (303)830-2241
(303)830-2265 (303)830-2297

EDITORS NOTES

It's the middle of summer, subscriptions are down to nothing, and everyone's gone to the mountains. Yet, we're expanding our publication and playing with new features daily. If you can't be bizarre - go home.

We're quite excited about developments in the Denver area electronic village. The new **X*PRESS** cable service opens an era of information and communication we had hardly considered plausible in the long range - yet it's available today and it's virtually a giveaway to PC owners.

The new **GEIS** service is also enormously exciting. We're pleased to have an area on **GEIS** where we can offer you some of the advantages of the electronic medium not possible with our print version. All back issues of **DPCB** will be available for download along with shareware and dialing directories for your favorite comm software. The continuation and expansion of our distribution of the **USA TODAY** Newspaper likewise demonstrates that PC communications is

coming of age. And we suspect that there is more going on with USWest's **CLASS** services and Calling Party Identification than our contacts at US West are willing to discuss. More on this later.

In our July issue, we accepted a small advertisement on an experimental basis. This month, we expand the program cautiously with a full page ad from Denver Tech Computers. To keep these items from displacing editorial space, we're adding another four pages to the newsletter. This will be our biggest issue ever.

We've also added more photos to the newsletter where appropriate. And, a number of readers have suggested a photo of the editor much like columnists John Dvorak, Steve Gibson, and Jim Seymour do in the larger computer publications. Well, we're not one of the larger publications. We're Denver PC Boardwatch. If we can't offer our readers something a bit different, there's not much point in competing with Ziff Davis and CW communications. Frankly, I just can't picture myself scowling out at you from a little black and white photo looking dour and knowledgeable with my jowls all acquiver. So instead, here's a one time shot of the editor with the staff of **Denver PC Boardwatch** working furiously on the coming September issue.



DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - AUGUST 1988

TITLE	PHONE	DESCRIPTION	TYPE	BPS	SOFT	CITY	SYSP
NBS Automated Computer Time	494-4775	ACTS - Sync PC Clock to NBS Atomic Clock	Custom	3/12	Custom	Boulder	Natl. Bureau of Standards
Adelante 104/93	443-8292	Central/Latin America Social Issues	IBM	3/12/24	Opus	Boulder	Zahai Stewart
Aerie, The 104/40	292-3162	Science Fiction	IBM	3/12	Opus	Denver	Leland Dirks
AmNet On-line 104/65	1-223-1297	Animal Rights Issues	IBM	3/12	TBBS	Fl Collins	James Cherry
Arkham Public Library 104/48	444-7686	Tradewars Game/IBM Software 6PM-8AM	IBM	3/12/24	QuickBBS	Boulder	Neil Beatty
Aurora Chairman	340-1844	City of Aurora Council/Mayor Forum	IBM	3/12	Chairman	Aurora	City of Aurora
Byte Shop 104/311	794-5065	Jokes / Adult Sections	IBM	3-96HST	QuickBBS	Littleton	Dan O'neal
Cable Net Opus	933-9359	Excellent Shareware Library	IBM	3/12/24	Opus	Lakewood	Ted Gilmore
CBA Information System	329-0159	Continental Basketball Association	IBM	3/12	TBBS	Denver	???
Chivalry 104/46	761-1634	D&D - Jokes - Tradewars - Chess - QBBS	IBM	3/12	QuickBBS	Aurora	Dax Davis
Christian Protocol	693-8791	Christian Messages - Bible Text	IBM	3/12/24	TBBS	Denver	Ken Johansen
Club Micro 104/88	832-5850	*C*Language/Database/Communication Files	IBM	3-96HST	Opus	Denver	Don Marquart
CMOS	322-4078	Colorado Mountain Operating Systems	IBM	3-96MIC	Minihost	???	Kevin Truitt
Coco County Airport 104/54	343-6707	TRS Color Computer Support	IBM	3/12/24	Opus	Aurora	Ron Bihler
Colorado Broadcasters 104/42	572-6256	Commercial Radio Frequency Lists	IBM	3/12	Opus	Denver	Lynn Osburn
Comm-Post, The 104/666	534-4646	Asiromy - Tandy 1000/2000 - Jokes	IBM	3/12/24	TBBS	Denver	Brian Barbee
Control Systems	458-6248	IBM/Compatibles Subscription Board	IBM	3-96MIC	RBBS	Denver	Lupe Ramiroz
CPM SIG INC 104/372	465-1313	Oldest User's Group in Area - CPM - IBM	IBM	3/12/24	Fido	Broomfield	Al Lundquist
CSM-SPE Oil Patch 104/59	273-3239	CSM Petroleum Engineering Department	IBM	3/12/24	Opus	Golden	Max Bordon
Cyber-Zone, The 104/61	860-0126	Science Fiction/USA Today	IBM	3/12/24	QuickBBS	Denver	Jonathan Wood
D-Link 1 104/411	936-2791	Golden Micro Computer Sales/Support	IBM	3-96HST	QuickBBS	Denver	Bob Wells
Data Bank	494-0167	IBM Messages	IBM	3/12/24	TCOMM	???	Guido Binetti
Day's End 104/20	650-5636	Astronomy Files-Telx/SF Echoes/USA Today	IBM	3-96HST	Opus	Denver	Chris Day
Denver Central 104/412	758-8720	Trojan List/Sports and Cooking Echoes	IBM	3/12/24	Opus	Denver	Dana Palmbad
Denver Tech Computer	799-4813	Retail Store - SCO Xenix / C Language	IBM	3/12	Comm/men	Englewood	Rolf Anderson
Dog House, The	320-0501	IBM/Atari Downloads - FoRem Net Mail	IBM	12/24	Forem	Denver	Lonnie Shinault
DROID, The	933-1501	On-line Tradewars and Baseball Games	IBM	3/12/24	QuickBBS	Littleton	Leonard Vandermaate
Eagle's Nest	933-0701	General Messages/Downloads	IBM	3/12/24	QuickBBS	Littleton	Ronald Olsen
Education 2000 104/29	449-9807	Education Issues Kindergarten - 12th	IBM	3/12	TBBS	Boulder	Roger Salamen
eSoft Support	699-8222	eSoft Inc. TBBS Software Support	IBM	3/12	TBBS	Aurora	Phil Becker
Eusebia 104/18	430-8376	Christian - Full KJV Bible Downloads	IBM	3/12/24	TBBS	Federal Heights	Jim Queisner
Excalibur 104/39	497-6051	C Program Files - C Echo Area 5PM-8AM	IBM	3/12/24	Opus	Boulder	Steve Roughton
Front Range PC Users Group BBS	1-493-4094	Fort Collins Group - Computer Express	IBM	3/12	Wildcat	Fort Collins	Tom Oppenheimer
FutureWave BBS 104/57	440-7425	Games / C Language / MIDI 6PM-7AM	IBM	12/24	Opus	Boulder	Ross Sponholtz
Gay Community 104/19	795-1215	Messages / Downloads for Homosexuals	IBM	3/12	QuickBBS	Littleton	???
GDP Technologies BBS	673-9470	CoreWars Game/C Language/Great Shareware	IBM	3/12/24	Wildcat	Lafayette	Tom Gettys
Greater Clifton PCBoard	1-241-1966	Grand Junction MUG - Ham/Packet Radio	IBM	3/12	PCBoard	Grand Junction	MUG of Grand Junction
Grizzly King	666-0824	Freeware/Colorado Outdoors/Programmers	IBM	3/12	TBBS	Lafayette	Bob McDuffee
Groto, The	694-9050	Amiga, Pascal - Ebert Personal Computers	IBM	3/12/24	TBBS	Aurora	Vincent Veritas
Holiday's Inn	699-7738	Colorado Backroad Exploring - C Language	IBM	3/12/24	QuickBBS	Aurora	Steve Holiday
Hostlink Informational Service	755-3174	Laser Printing/Online Sales/Hacker	IBM	3/12	QuickBBS	???	Charles Schulten
HP Haven 104/312	427-6976	Tradewars/On-line Games/ 5PM-7:30 AM	IBM	3/12/24	QuickBBS	Westminster	Mark Willecke
Info-Net BBS	680-1648	Computer's Plus Board	IBM	3/12/24	RBBS	Aurora	Computer's Plus
Into The Wind 104/63	939-9272	Support for Shamaal Software 10P-11A	IBM	3/12/24	Opus	Boulder	Dana P'Simer
Investment Lounge	759-3721	Excellent Investment/Financial Topics	IBM	3/12	TBBS	Aurora	Mark Greve
Isle of Man	447-1942	Gay Community BBS	IBM	3/12	RBBS	Boulder	???
Lakewood Department of Safety	987-7388	Police Sponsored - Law Enforcement Msgs	IBM	3/12	RBBS	Wheatridge	Larry Scheideman
Lodge, The	420-0305	Arvada Quick BBS Board	IBM	12	QuickBBS	Arvada	Harold 'Monty' Montrose

Manville Info Services 104/978	978-3946	Business Software / Apple Macintosh	IBM	3/12	Fido	Littleton	???
Master Work, The 104/55	341-6614	Recently Up - General Communications	IBM	12/24	Opus	Aurora	Roy Prickett
Maverick	1-434-4211	Hardware Sales - \$10 Annual Fee	IBM	3/12/24	RBBS	Grand Junction	David Fouts
Metamorphosis	1-772-7229	PCB-Echo Net/260 MB of Files/Online Game	IBM	3/12/24	PCBoard	Lafayette	Tony Ferns
Micro World Inform	987-2671	RBBS-IBM-Commodore-Amiga-Atari 7PM-8AM	IBM	3/12	RBBS	Lakewood	Leonard Vandermate
Micro-Date 104/64	455-4793	Matchmaking/ELIZA Psychoanalyst On-Line	IBM	3/12/24	TBBS	Littleton	John Anderson
MicroLink B 104/108	972-9600	Good Download Library - USA Today News	IBM	3-96HST	TBBS	Littleton	Girard Westenberg
MicroLink C 104/53	455-9600	Professional Computer Sales Co.	IBM	3/12/24	TBBS	Denver	John Anderson
MicroLink D 104/711	467-9704	Professional Computer Sales Co.	IBM	3-96HST	QuickBBS	Arvada	???
MicroLink Minus Two 104/204	329-9598	Professional Computer Sales Inc.	IBM	3/12	TBBS	Denver	Paul Smith
MicroLink 104/614	698-9924	CUSS Computer Use in Social Services	IBM	3-96HST	Fido	Denver	Chuck Mastini
Mile Hi Tech Fidonet 104/56	973-9338	Fido News/List	IBM	3/12/24	TBBS	Littleton	Oscar Barlow
Mile High Net	671-9308	Fido Board	IBM	3/12/24	Fido	Aurora	Dave Miller
NoName BBS	988-5765	Selected Quality Shareware - New Users	IBM	3/12/24	Minihost	Lakewood	Jon Johnson
Nurse Link 104/52	270-4936	UCHSC School of Nursing	IBM	3/12/24	TBBS	Littleton	Chuck Mastini
Odysseus 104/208	988-2133	D'Bridge Beta Test Site	IBM	3/12	QuickBBS	Lakewood	Bill Willoughby
OKY BBS	494-0533	Armenian Electronics Consultant	IBM	3/12/24	QuickBBS	Boulder	Onnig Kouyoumdjian
On-Line Consulting 104/45	449-5251	Consultant Directory/Desktop Publishing	IBM	3/12/24	Opus	Estes Park	Lee Lasson
On-Line Shopping Service	442-5125	Boulder Home Grocery Delivery \$5 + 5%	IBM	3/12	Chairman	Boulder	Pete Dempsey
P2B2 S 104/51	329-3337	Public Psychiatry / AI Themes 6PM-8AM	IBM	3/12/24	QuickBBS	Denver	Claude Warren
PCjr-NET 104/904	789-4610	IBM PC Jr. Technical Info /Radio Comm	IBM	3/12/24	Opus	Englewood	Phil Kaiser
Phoenix TBBS 104/739	841-9570	USA Today Newspaper/4 lines/INFO-MAT Mag	IBM	3-96HST	TBBS	Parker	Larry Kayser
Pinecliffe 104/28	444-7073	170 Meg - Online Order for CDB Systems	IBM	3/12/24	Opus	Boulder	Craig Baker
Professional System, The	740-2223	Writers, Lawyers, EDP Auditors	IBM	3/12	TBBS	Littleton	Bob Voorhees
Quick BBS Support Board 104/24	423-3114	Home of Quick BBS Software	IBM	3/12/24	QuickBBS	Arvada	Adam Hudson
R.A.B.I.T.	757-9509	Colorado Highway Department - Planning	IBM	3/12	TBBS	Denver	Colorado Dept. Highways
Randolph Society Info Network	665-9152	Philosophy/Church of Illumination	IBM	3/12	TBBS	Louisville	Hal/Fran
Rocky Mountain RBBS	750-2107	INFO NEEDED	IBM	3/12	RBBS	Aurora	Steve Kornreich
Serendipity	465-3729	IBM, Epson Equity, TRS-80 Club Msgs	IBM	3/12	RBBS	???	Terry Connolly
Short Line 104/36	778-7312	Opus/IBlink/Term Support/Pascal/ C	IBM	3/12	Opus	Lakewood	Alan Applegate
Silver Streak, The	790-2534	Science/Engineering/Turbo Pascal Utilis	IBM	3/12/24	Wildcat	Littleton	Dennis McKinney
SnarfQuest 104/604	973-9402	Hot 386 Micro with Games/ReadMACs	IBM	3/12/24	Opus	Littleton	John Denny
Sound Doctrine Bulletin Board	680-7209	Christian BBS / Sound Doctrine Church	IBM	3/12	TBBS	Aurora	Tim Williams
Space Environment Service Cntr	497-5000	NOAA Solar Flare Forecast / Advisory	IBM	3/12	TBBS	Boulder	US Dept of Commerce
Space Network	494-8446	Space Exploration Information	IBM	3/12/24	TBBS	Boulder	Tom Meyer
Squirrel's Nest	1-242-7977	Grand Junction BBS	IBM	3/12/24	PCBoard	Grand Junction	Allan Worley
Steamboat Information	1-879-6741	Info on Steamboat Springs Area	IBM	3/12	TBBS	Steamboat Springs	???
TBBS Net 104/23	699-9248	The Bread Board System Support	IBM	3/12/24	TBBS	Aurora	Phil Becker/eSoft Inc.
Terus Public BBS 104/43	469-7161	MINDS AI TextBase Indexer Support	IBM	3-96HST	Opus	Broomfield	Todd Hill
Terus RegUser 104/44	341-1404	MINDS Online Textbase - USA TODAY	IBM	3-96HST	Opus	Aurora	Bart Henthorn
The 8th Sea 104/610	252-9235	Net 104 Coordinator - Lots of Echomail	IBM	3/12/24	QuickBBS	Northglenn	Rod Lamping
This End Up 104/30	430-1585	Denver PC Boardwatch/USA Today 10PM-10AM	IBM	3/12	Opus	Westminster	Steve Carnes
Trout Unlimited	499-2828	Trout Fishing / Water Condition Reports	IBM	3/12	Fido	Boulder	Ralph Stewart
Twin Peaks PCBoard	1-651-0225	On-line Games	IBM	3/12/24	PCBoard	Longmont	Ken Krueger
UniSource	721-6640	4-line pay service - \$2.40 hourly	IBM	3/12	Galacti	Littleton	Bill Flowers
Value Line, The	363-0422	Electronics/Communications 8PM-5AM	IBM	3/12	Wildcat	Aurora	Chris Millikin
Watchdesk, The 104/66	450-0822	Safety - Arson - Hazardous Material	IBM	3/12/24	QuickBBS	Thornton	Emit Hurdalbrink
Waterton Computer Club	977-7096	Martin Marietta Employees - 5PM-7AM	IBM	3/12/24	RBBS	Denver	Ken Beaudrie
C.A.R.L. Denver	830-0519	Colorado Association Research Libraries	Tandem	24	Custom	Denver	N/A
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C.A.R.L. Denver	830-1548	Colorado Association Research Libraries	Tandem	3/12	Custom	Denver	N/A
C.A.R.L. Denver	830-2199	Colorado Association Research Libraries	Tandem	3	Custom	Denver	N/A

DENVER PC BOARDWATCH

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C.A.R.L. Denver	830-2241	Colorado Association Research Libraries	Tandem	3/12	Custom	Denver	N/A
C.A.R.L. Denver	830-2265	Colorado Association Research Libraries	Tandem	3/12	Custom	Denver	N/A
C.A.R.L. Denver	830-2297	Colorado Association Research Libraries	Tandem	3/12	Custom	Denver	N/A
C.D. Players	825-0419	Computer Discount On-line Store/Amiga	Amiga	3/12/24	TBBS	Denver	Tony Scott
Greenline	429-7145	Amiga Messages and Downloads	Amiga	3/12	BBS-PC	Broomfield	Phil Green
Outer Limits BBS, The 104/605	1-221-5107	Amiga System Emulating IBM-XT	Amiga2000	3/12/24	OPUS	Fort Collins	Gary Whicker
Access High	329-6579	Apple Programming/Messages	Apple	3/12	GBBS	Denver	Glenn Hayhurst
APSNat	693-6737	Aurora Public Schools Network	Apple	3/12/24	GBBS	Aurora	Columbia Middle School
Box's Cabin, The	424-9185	Apple / Technical Notes	Apple	3/12/24	Protee	Arvada	Kent Roberts
C.A.C.H.E	745-4960	CO Apple & Compatible Home Enthusiasts	Apple	3/12/24	GBBS	Denver	???
Cemetery BBS, The	980-9413	PT Special/Games/40 MB Downloads	Apple	3-96HST	GBBS	Lakewood	Steve Feiler/Leviathan
City Morgue, The	442-8498	Necromaniacal Fixation With Stiff Bodies	Apple	12/24	GBBS	Boulder	???
Club House, The	756-9134	RP Games - Golf Format - Messages	Apple	3/12	GBBS	Denver	Pinsetter
Code 5150	696-6673	Lunatic Discussions / Crazy People	Apple	3/12/24	GBBS	Aurora	Chris Thilges (Grunt)
Cutting Board, The	427-2413	60 MB Apple Software and Messages	Apple	3/12/24	GBBS	Lakewood	Cutter
Dark Side of the Moon	469-3437	Matchmaking / Dating for Teens	Apple	3/12	Protee	Broomfield	Marc Anderson
Denver Deaf-Net	989-9245	Hearing Impaired/Computing	Apple	3/12	Protee	Lakewood	David Sheneman
Discovery, The	449-8946	Music / General Messages	Apple	3/12	Alphall	Denver	???
DJ	789-0500	Galactic Conquest Game On-line 40 MB	Apple	3-96HST	GBBS	Englewood	David Matzel
Funny Farm	989-0915	Apple Only BBS	Apple	12/24	???	Lakewood	???
Genesis Project	287-8267	Apple II General	Apple	3/12/24	Protee	Commerce City	Gene Humbert
Greeley-Com-Net	1-351-8861	Modern Users Board	Apple	3/12/24	GBBS	Greeley	Lowell Shatraw
Hollows, The	428-0372	Smoke Signal Software/PRIME BBS Support	Apple	3/12	Protee	Denver	Vince Cooper
L&L Support	420-3568	Primary GBBS Pro Software Support BBS	Apple	3/12/24	GBBS	Arvada	Lance Taylor-Warren
Last Chance BBS	690-0194	Entertaining Logon Questionaire	Apple	12/24	GBBS	Denver	Captain Ozono
LES-COM-NET	233-5824	Lesley College Communications Network	Apple	3/12	GBBS	Lakewood	George Willatt
Mom's BBS	690-4913	General Message/Socializing	Apple	3/12	ALFA-III	???	???
Next Generation	425-6235	On-line Games	Apple	3/12	Protee	Golden	Tony ???
Odyssey III	691-0169	Adult(18) / Sex Oriented 5PM-8AM	Apple	3/12	GBBS	Denver	Sundance
Playhouse	286-7399	Adult / Jokes / Sexual Themes	Apple	3/12	Protee	Denver	???
S.O.B. Lanes, Inc.	452-6902	Apple Board with Bowling Theme	Apple	3/12	GBBS	Westminster	Simon
Sheridan & Associates	935-1489	Buy / Sell / Trade - Chess History	Apple	3/12	GBBS	Denver	Ken Sizer
Timberline Saloon	798-1207	Apple II - Foul Language a Specialty	Apple	3/12	GBBS	???	Sam Walsh
Trekker World	366-5011	Star Trek Fanzine 7AM-10PM	Apple	3	GBBS	Aurora	Robert Morgan
Bavarian's Gausthaus	367-5877	New Atari! BBS Software System	Atari	3/12	Express	Aurora	Bavarian
Charlotte's Web	367-0668	Atari BBS	Atari	3/12/24	Carinall	Aurora	Bob and Charlotte
Four Wheeling BBS, The	469-4954	Jeeping / Camping / Outdoors	Atari	3/12	Forem	Broomfield	John Ferguson
Generic BBS	1-857-6881	Titanic Historical Society Information	Atari	3/12	BBS Exp	Fort Lupton	L.A. Sreninger
Hozerville	933-0906	Atari 8 BIT	Atari	3/12	TODAMIS	???	???
Mile High Forum	431-1404	Outstanding Atari ST Database - HST 9600	Atari	3-96HST	Forem	Arvada	Phil Michaelson
Mycroft	777-8898	Horizon Computer/National Atari BBS List	Atari	3/12	TODAMIS	Denver	Brad Baumbach
Predacon	988-6886	Atari 8 bit / ST with 10 MB	Atari	3/12	Carina	Lakewood	Ron/Shannon Sellers
Ron and Shannons BBS	978-0298	Atari Support 5.4 MB XE 130	Atari	3/12/24	OASIS	Englewood	Dave Lloyd
Skyline Computers	457-0320	Atari ST Support, Files, etc.	Atari	3/12/24	Forem	Denver	Craig Steiner
Vault, The	796-0539	USA/FZMAG Member	Atari	3/12	Forem	Englewood	Andy Strasheim
White Runes of Tinuviel	972-8566	Tolkien Subjects/Dungeons and Dragons	Atari	3/12	STadel	Littleton	???
ZAPI	367-4103	Atari/ST/8 Bit	Atari	3/12	Oasis	Aurora	???
Phasar	745-4305	Teen Conversation - Advice Column	C-128	3/12	C-Net	Aurora	Roy Rush

Regimental Headquarters 375-9556
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 Radscon 1-675-3214
 Radscon 1-675-3225
 Radscon 1-675-3326
 Boulder Public Library System 444-2057
 Boulder Public Library System 444-2074
 Kings Bench 104/615 377-6725
 Blue Planet 979-7299
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 Niteline PBBS 277-1447
 Controller Board/TBBS Island 690-9423
 Crossroads 499-0457
 Crossroads 989-8397
 Dinosaur Board 1-652-3595
 King's Market Bookshop 665-6091
 Photo Tech 781-1079
 PSINet 985-2634
 Alpha BBS/intercomex 367-1935
 Temple of Doom 771-9523
 GLOBAL Information 286-7914

Commodore - Military Theme C-128 3/12
 Commodore Network Systems International C-64 3/12
 Commodore Computer Info C-64 3/12
 C-64/C-128/Amiga Info-Dnlds-Messages* C-64 3/12
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 StarTrek Theme with 3.6 M3 Software C-64 3/12
 Commodore C-64 3/12
 Commodore Board with Chilly Theme C-64 3
 Commodore with Laboratory Theme C-64 3/12
 Ham Radio/Sports/Swap/Adult Jokes C-64 3
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 Areas Longest Logon Message C-64 3/12
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 Hard Disk Installation / Tech Support CP/M 3/12
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 Franklin Messages Franklin 3
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 Jokes, Amazing but True stories, HP-Vectra 3/12
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 Laser Printing/Scanning/Linotronic 300 MAC 3/12
 Denver Macintosh Users Group MAC 3-96HST
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 Compatible Computer Info Exchange TANDY1000 3/12/24
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 INFO NEEDED unknown 3/12
 Fee Subscription / Software Database VAX 3/12

C-Net Denver Bob Greear
 C-Net Boulder Greystoke Mindmaster
 C-Net Northglenn ???
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 C-Net Denver Steve Boyd
 C-Net Denver Mr. Spock
 C-Net Castle Rock ???
 C-Net Boulder Snowbird
 C-Net Denver Professor Beaker
 C-Net Westminster Richard Miller
 C-Net Arvada The Nun
 C-Net Westminster The Lineman
 C-Net Lakewood Bob Hennessy
 C-Net Arvada Sparr-Master
 Ivory Denver ???
 ZBYE Golden John Holmgren
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 Fido Aurora Jim Turner
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 DYM Englewood Bob Simpson
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 GBBS Louisville Ed Fenner
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 Fido Denver Ralph Allison
 ??? Littleton Tom Nielson
 Tigger Golden Joe Applegate
 Paradigm Golden Keith Amann
 TBBS Aurora Mike Hastings
 TBBS Lakewood Mark Bradford
 TBBS Lakewood Mark Bradford
 TBBS Niwot Chris Anderson
 TBBS Boulder Jim Burt
 TBBS Englewood Jim Gerritz
 TBBS Denver William Tedder
 UNaXcess Denver Cyro Lord/Robert
 ??? Englewood ???
 Custom Denver Jim Comstock

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